



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/628,542	07/28/2003	Douglas D. Klendworth	88-1066B	3556

24114 7590 03/25/2005

LYONDELL CHEMICAL COMPANY
3801 WEST CHESTER PIKE
NEWTOWN SQUARE, PA 19073

EXAMINER

CHOI, LING SIU

ART UNIT	PAPER NUMBER
----------	--------------

1713

DATE MAILED: 03/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/628,542

Applicant(s)

KLENDWORTH ET AL.

Examiner

Ling-Siu Choi

Art Unit

1713

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 July 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 20-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 20-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>09/20/2004</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This Application is a Division of US Application Serial Number 10/055,072, filed January 23, 2002, now US Patent Number 6,646,072.
2. This Office Action is in response to the Preliminary Amendment filed July 28, 2003. Claims 1-19 were canceled and claims 20-25 have been added. Claims 20-25 are now pending.

Claim Rejections - 35 USC § 102

3. **The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:**

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 20-25 are rejected under 35 U.S.C. 102(b) as being anticipated by Bottrill (US 4,473,672).

An exfoliated clay-filled polyolefin composition prepared by	
A	treating a non-acid-treated smectite clay with a Ziegler-Natta catalyst in the presence of a hydrocarbon
B	polymerizing an olefin in the presence of the treated clay and an organoaluminum cocatalyst selected from the group consisting of trialkylaluminums, triarylaluminums, alkyl aluminum halides, alkyl aluminum dihalides, and mixtures thereof

(summary of claim 20)

Bottrill discloses a polyolefine composition comprising an olefine polymer and an aluminosilicate clay, the composition being obtained by the process comprising the steps of (1) treating an **aluminosilicate clay** with (a) an organic magnesium halide compound or (b) an organic magnesium compound followed by a halogen-containing compound, (2) adding to the product of step (1) at least one compound of a **transition metal of Group IVA, VA or VIA** of the Periodic Table, and (3) effecting the polymerization of at least one olefine monomer in the presence of the product of step (2) and an **organic compound of aluminium** such as aluminum trialkyl, wherein the aluminosilicate clay is in a range from 10 up to 90 wt% of the composition (claims 1 and 5). Thus, the present claims are anticipated by the disclosure of Bottrill.

5. Claims 20-25 are rejected under 35 U.S.C. 102(b) as being anticipated by Alexandre et al. (US 6,465,543).

Alexandre et al. disclose a nanocomposite obtained by the process comprising the steps of (a) contacting an organophilic clay such as sodium montmorillonite with an excess of methyl aluminoxane in the presence of an inert solvent to form a **clay/methyl aluminoxane**

Art Unit: 1713

complex; (b) removing the solvent and excess methyl aluminoxane from the complex; (c) contacting the complex of step (a) with a **Ziegler-Natta catalyst** in the presence of a non-polar inert solvent to make a clay/methyl aluminoxane/catalyst complex; and (d) contacting the complex of step (c) with ethylene or propylene under polymerization conditions to form the nanocomposite, wherein the organophilic clay is made by dispersing and swelling a hydrophilic smectite clay in water, followed by removing the water from the swelled clay by freez-drying (col. 2, lines 18-38; claims 1, 4, 5, and 7). It is noted that the difference between the present claims and the disclosure of Alexandre et al. is the requirement of the contact of the clay with the Ziegler-Natta catalyst prior to the contact with the cocatalyst. However, the present claims are drawn to product-by-process claims. The case law hold that “**The patentability of a product does not depend on its method of production.** If the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process.” *In re Thorpe*, 777 F.2d 695,698,227 USPQ 964,966 (Fed.Cir. 1985). Thus, the present claims are anticipated by the disclosure of Alexandre et al.

6. Claims 20-25 are rejected under 35 U.S.C. 102(b) as being anticipated by Maxfield et al. (WO 95/06090).

Maxfield et al. disclose a nanocomposite comprising a polymer matrix and a smectite clay, the nanocomposite being obtained by the process comprising the steps of (a) contacting an **organophilic clay** with an excess of **methyl aluminoxane** in the presence of an inert solvent to form a clay/methyl aluminoxane complex; (b) removing the solvent and excess methyl

Art Unit: 1713

aluminumoxane from the complex; (c) contacting the complex of step (a) with a **Ziegler-Natta catalyst** in the presence of a non-polar inert solvent to make a clay/methyl aluminumoxane/catalyst complex; and (d) contacting the complex of step (c) with ethylene or propylene under polymerization conditions to form the nanocomposite, wherein the organophilic clay is made by dispersing and swelling a hydrophilic smectite clay in water, followed by removing the water from the swelled clay by freez-drying (claims 8-9). It is noted that the difference between the present claims and the disclosure of Maxfield et al. is the requirement of the contact of the clay with the Ziegler-Natta catalyst prior to the contact with the cocatalyst. However, the present claims are drawn to product-by-process claims. The case law hold that “**The patentability of a product does not depend on its method of production.** If the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process.” *In re Thorpe*, 777 F.2d 695,698,227 USPQ 964,966 (Fed.Cir. 1985). Thus, the present claims are anticipated by the disclosure of Maxfield et al.

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ling-Siu Choi whose telephone number is (703)305-0887.

If attempt to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu, can be reach on (703)308-2450.

Any inquiry of a general nature or relating to the status of this application or proceeding

Art Unit: 1713

should be directed to the group receptionist whose telephone number is (703)308-2351.

Ling Sui Choi

**LING-SUI CHOI
PRIMARY EXAMINER**

March 15, 2005